# BIOSORPTION OF Pb (II) ION FROM AQUEOUS SOLUTION BY USING MANDARIN ORANGE PEEL (*Citrus reticulata*) BIOMASS : OPTIMIZATION STUDY

**MOHAMMAD SHABARUDIN BIN SULAIMAN**

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Assoc. Prof. Kasmawati Mohamed
Supervisor
Faculty of Applied Sciences
Universiti Teknologi MARA
40450 Shah Alam
Selangor

Sabrina M. Yahaya
Project Coordinator
B.Sc (Hons) Applied Chemistry
Universiti Teknologi MARA
40450 Shah Alam
Selangor

Dr Yusairie Mohd
Head of Programme
B.Sc (Hons) Applied Chemistry
Universiti Teknologi MARA
40450 Shah Alam
Selangor

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Mohammad Shabarudin Bin Sulaiman

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## ABSTRACT

### BIOSORPTION OF Pb (II) IONS FROM AQUEOUS SOLUTION BY *Citrus reticulata*

Industrialization moves so rapid that the disposal of heavy metals into the environment increases accordingly. Contamination of environmental by Pb (II) ions is a serious problem and this has led to the development of new and improved methods for treating wastewaters since available conventional methods are expensive and inefficient for removal of Pb (II) ions at low concentration. Therefore the studies on the removal of Pb (II) ions from aqueous solution were done on pH, contact time and biosorbent dose. From the studies, it were found that the optimum pH for the removal of Pb (II) ions from aqueous was determined at pH 6 with the highest percentage removal of 96.95% and uptake capacity of 0.4848 mg/g. The result showed that optimum contact time was determined at 30 minutes biosorption process with percentage removal of 97.15% with uptake capacity 0.4858 mg/g. Otherwise, it was found that 1.0 g was the optimum biosorption dose, which give highest percentage removal of 97.06% with uptake capacity 0.8487 mg/g. For biosorption of Pb (II) ions from aqueous solution by pectin-rich fruit materials, *Citrus reticulata* peels were found to be suitable and effective biosorbent.